NEWCO ENTERPRISES, INC.

SERVICE MANUAL

COMMERCIAL BARISTA SERIES

Models: CB, CB-2, CB-5, CB-7 & CB Dual

Introduction

The Commercial Barista series by Café 98 incorporates the latest features in brewer control technology along with the proven Brewing system you have come to rely on. Although providing for enhanced functionally brewer control remain intuitive and setup of key operating parameters couldn't be easier. Multiple brew volumes, visa-brew delay, tank temperature set point, brew mode, filter parameters and more are all set from the front control panel using a digital display for precise control. The following pages will explain the control features and then step through the process required to program your unit.

Brew Volume [Single Brewer] – The Commercial Barista series has two independently brew volumes denoted Brew 1 and Brew 2. The brew time has been converted to display brew volume during setting to allow for easier setting of the desired brew volume. Either of these brew times may be turned off or set for any volume between 30 and 255 ounces for ultimate flexibility. Actual volume delivered may vary slightly from the programmed volume due to actual brewing conditions. However the volume delivered will be consistent from brew to brew. Simply adjust volume up or down to compensate, as you would do with a standard time setting.

Brew Volume [Dual Brewer] – Each Side of the CBD brewer may have up to three independently programmable brew volumes denoted by Brew 1, 2, & 3. Brew times may be set independently for each of the six brew volume selections on the brewer. Brew time may be turned off or set for any volume between 30 seconds and 8 minutes for ultimate flexibility.

Double Dump Valve Option – If set to on, this feature will activate a second dump valve to allow for brewing larger volumes without a corresponding increase in brew time. This will help to preserve the beverage quality on larger brew volumes.

Visa-Brew Time – Provides for additional time to flash brew light, after the water delivery portion of brew cycle, to allow for the coffee to finish draining from the brew basket. The flashing indicator light, and the delay in the audible coffee ready signal, aid in preventing premature removal of either the brew base or the dispenser.

Water Temperature Set Point – Allows for digitally setting the temperature of the water in the brewers tank system to any valve between 170 and 205 Deg F. The heating circuit also incorporates a pulse heating circuit, which slows the heater as the set point is approached, to avoid temperature overshoot.

Auto Arm – When enabled this feature ensures that the brewer is up to temperature prior to brewing to ensure proper extraction is obtained. If the water temperature in the tank is below the water temperature set point when the brew cycle is initiated, the water delivery portion of the brew cycle is delayed. The heating light will begin to flash indicating that the unit is in the brew mode but is not up to temperature. At the same time, the tank heater will begin heating. When the tank reaches the preset temperature, the brew cycle will resume. Auto Arm may be overridden by depressing the appropriate button for several seconds until the brew cycle starts.

Pre-infusion Mode – This mode delivers a small amount of hot water over the coffee grounds and then pauses. This allows the gasses in the coffee to escape and allows the grounds to absorb the water before continuing. After this pause the brew cycle resumes normally. Pre-infusion can yield better extraction rates than normal brewing modes. The pause time is added to the brew and visa-brew time. The pre-infusion times are preset at the factory. Pre-infusion for Brew 1 and 2 may be turned on or off independently.

Pulse Brew Mode – This mode cycles the valve on or off during the brew cycle. This slows the entry of cold water into the tank and minimizes the mixing action caused by introducing a large volume of cold water into the tank at one time resulting in an increase in brew temperature. The additional turbulence and mixing created along with increased temperature can result in higher extraction rates for the coffee. The time set for pulse brewing should exceed the time set for brew time. The time difference between the pulse brew time and the brew time is the amount of time available as off time. The difference is divided equally and distributed throughout the brew cycle to provide a pulse every 20 seconds of brewing. Pulse brew mode for Brew 1 and 2 may be turned on or off independently.

Audible Alert Mode – Provides an audible signal when coffee has finished brewing notifying everybody that fresh coffee is available. May be turned on of off and set for 1 – 9 beeps.

Coffee Freshness Monitor – Monitors the elapsed time since the brew cycle to assure the coffee is fresh. Freshness time may be set for 10 minutes to 2 hours. The last 10 minutes of the freshness time are counted down on the display and when the preset time is reached a beep is sounded and the coffee monitor light begins to flash.

Filtering Flow Rate – This is the flow rate of incoming water and is used to calculate the volume of water that has been filtered. The flow rate may be turned off or set for .25, .50, .75 or 1.00 gallon per minute flow rate. Note: A filter with a flow rate of 1 GPM minimum is recommended.

Filter Capacity – The filtering capacity in gallons of the filter installed (optional) on the brewer may be selected here. Capacity may be turned off or set for one of the following available values: 0, 500, 1500, 2000, or 2500 gallons.

Introduction (Continued)

Number of Brews – The number of brew cycles started may be tracked with this feature. The accumulated number of cycles may be reset. Using the brew buttons, first display "Cir" when in the program mode, and then depress cancel.

Power Mode – Allows you to automatically save energy when the brewer is not in use for a length of time specified under power shutdown time. Available modes are: normal, power save (standby) and power down. The modes are described below.

- **Normal** – In this mode the tank temperature will be maintained at the preset temperature at all times.
- **Power Save (Standby)** – In this mode the tank temperature will be maintained at approximately 170 degrees when the set time has been reached. Brew 1 light will flash about once every 10 seconds to indicate unit is in power save mode.
- **Power Down** – In this mode the tank heater element will be disabled when the set time has been reached. Brew 2 light will flash about once every 10 seconds to indicate unit is in power down mode.

Sequence Of Programming Steps For Single Barista Controller

- Depress and hold Cancel button until display lights up. (Approximately 10 seconds).
- You are now in the Program Mode. Functions to be programmed appear in the order in which they are shown in the following table.
- Use the Cancel button to cycle through the functions to find the one you wish to change.
- Use the Brew 1 button to lower the displayed value (-) and the Brew 2 button to raise the value (+). Press Cancel to store the changed value and advance to the next function.
- If the brewer detects no activity for approx. 60 seconds it will exit out the Program Mode, except as noted below.

Code	Function To Set	Set Values Available	Lights Icon Adjacent To
1A	Brew 1 time	OFF, 30 ounces – 255 ounces	Brew 1
1b	Brew 2 time	OFF, 30 ounces – 255 ounces	Brew 2
2a	Dual volume – brew 1 Double dump feature	ON or OFF	Water filtering Brew 1
2b	Dual volume – brew 2 Double dump feature	ON or OFF	Water filtering Brew 2
3	Visa-brew time	OFF, 30 second – 2.5 minutes	Brew 1 & Brew 2 (both flashing)
4	Water Temp. 1	170 F – 205 F	Service
5	Auto Arm	ON or OFF	Heating (flashing)
6A	Pre-infusion 1 mode	ON or OFF	Brew 1 (pulsing) Coffee Monitor
6b	Pre-infusion 2 mode	ON or OFF	Brew 2 (pulsing) Coffee Monitor
7	Pulse brew mode	ON or OFF	Brew 1 & Brew 2 (pulsing)
7A	Pulse brew 1 time 2	0 seconds – 60 seconds	Brew 1 (pulsing)
7b	Pulse brew 1 time 3	0 seconds – 60 seconds	Brew 2 (pulsing)
8A	Audible alert mode	ON or OFF	None
8b	Audible alert # of beeps	Off, 1 – 9	None
9	Coffee freshness monitor	10 minutes – 2 hours	Coffee Monitor
10A	Filtering flow rate	OFF, 0.25 – 1.00 GPM	Water Filtering
10b	Filter capacity 4	OFF, 0.50 – 2.50 gal. X 100	Water Filtering (flashing)
11	Number of brews	Quantity, Cir	Brew 1 & Brew 2
13A	Power Mode	Normal, Power Save, Power Down	None (Displayed: P:n, P:s & P:d)
13b	Power shutdown time 5	30 minutes – 4 hours	None
End	None 6	N/A	None

1. Brewer will remain in this sequence indefinitely until Cancel button is pressed. Heating icon will track heater operation.
2. Hidden if pulse brew mode is off or Brew 1 time is off.
3. Hidden if pulse brew mode is off or Brew 2 time is off.
4. Hidden if filter flow rate is off.
5. Hidden when power save mode is normal.
6. Program mode will time out in 15 seconds at end of programming sequence.

Introduction (Continued)

Sequence Of Programming Steps For Dual Barista Controller

- Simultaneously depress and hold the left & middle brew buttons until display lights up (approx. 10 seconds).
- You are now in the Program Mode. Functions to be programmed appear in the order in which they are shown in the following table.
- Use the middle brew button to cycle through the functions to find the one you wish to change.
- Use the left brew button to raise the displayed value and the right brew button to lower the value. Press middle brew button to store the changed value and advance to the next function.
- If the brewer detects no activity for approximately 60 seconds it will exit the Program Mode, except as noted below.

Code	Function To Set	Set Values Available	Left Side	Right Side
1A	Brew 1 time	OFF, 30 sec – 8 mins	85 Oz (2:00+/-)	85 Oz (2:00+/-)
1b	Brew 2 time	OFF, 30 sec – 8 mins	170 Oz (4:00+/-)	170 Oz (4:00+/-)
1c	Brew 3 time	OFF, 30 sec – 8 mins	255 Oz (6:00+/-)	255 Oz (6:00+/-)
2A	Brew 1, double dump feature	ON or OFF	OFF	OFF
2b	Brew 2, double dump feature	ON or OFF	OFF	OFF
2c	Brew 3, double dump feature	ON or OFF	OFF	OFF
3	Visa - Brew Time	OFF, 30 sec – 2.5 mins	1:00	1:00
4	Water Temperature **1**	170 F – 205 F	202	202
5	Auto Arm	ON or OFF	ON	ON
6A	Pre-infusion 1 mode **2**	ON or OFF	OFF	OFF
6b	Pre-infusion 2 mode **2**	ON or OFF	OFF	OFF
6c	Pre-infusion 3 mode **2**	ON or OFF	OFF	OFF
7	Pulse brew mode	ON or OFF	ON	ON
7A	Pulse brew 1 time **3**	OFF, 30 sec – 8 mins	4:30	4:30
7b	Pulse brew 2 time **3**	OFF, 30 sec – 8 mins	5:00	5:00
7c	Pulse brew 3 time **3**	OFF, 30 sec – 8 mins	6:30	6:30
8A	Audible alert/mode	ON or OFF	ON	ON
8b	Audible alert no. of beeps	Off, 1 – 9	4	4
9	Coffee freshness monitor	10 mins – 2 hrs	2 HRS	2 HRS
10A	Filtering flow rate	OFF, 0.25 – 1.00 gal. /min	OFF	OFF
10b	Filter capacity **4**	OFF, 0.50 – 2.50 gal. X 100	OFF	OFF
11	Number of brews	ON or OFF, Clr	N/A	N/A
12A	Auto warmer shutoff **5**	ON or OFF	N/A	N/A
12b	Time interval before shutoff	0 – 4:15	N/A	N/A
13A	Power mode	Normal, Power Save, Power Down	Normal	Normal
13b	Power shutdown time **6**	30 mins – 4 hrs	N/A	N/A
End	None 7	N/A	N/A	N/A

1. Brewer will remain in this sequence indefinitely until Cancel button is pressed. Heating icon will track heater operation.
2. Hidden when corresponding brew time is OFF
3. Hidden if pulse brew mode is off or corresponding brew time is OFF.
4. Hidden if filter flow rate is off.
5. Warmer models only.
6. Hidden when power save mode is normal.
7. Program mode will time out in 15 seconds at end of programming sequence.

Introduction (Continued)

Error Messages

The following table explains the error messages, which may be encountered, on the brewer. Going into the program mode, using the brew button to display “Cir” and then pressing the cancel button will clear the error messages.

Error Message	Description	Cause
Er1	Fill run error	The fill solenoid has either run for more than six (6) minutes on the initial tank fill or Three (3) minutes in normal operation.
Er2	Heater run error	The tank heater has run for more than 30 consecutive minutes.
Er3	Shorted probe	Short in the thermistor circuit.
Er4	Open probe	Break in the thermistor circuit.
Ful	Filter limit reached	The selected filtering capacity of the filter has been reached.

Calibrating Commercial Barista

There is a need to calibrate your machine at your installation. This step lets your machine know what type of water volume flow is going through your machine at your location. Once this step is done, your machine will program easier.

To get into calibration mode you need to turn off your machine and hold in the cancel button as you turn on the machine. Continue to hold the cancel button in till you get past all the flashing lights and beeps, this takes about 5 seconds. Now release the cancel button. Now push and hold the cancel button again for about 15 seconds. After 15 seconds has past you should be able to release the button. This takes you into program mode, but this time you will have four (4) extra steps.

The program mode will start as always with 1A. To advance past 1A push the cancel button again and you should see 1B. Pushing your cancel button again will get you to the next four (4) steps, 1C, 1D, 1E,and 1F, which are your calibration steps. So push your button again and lets get started.

At 1C a two-minute time will be displayed and the Brew 1 button will be lit. This button, when pushed, will begin the process of calibrating the volume for one dump valve. You will need to capture the water that will be dispensed when you push the button. You will also need to measure the water that is dispensed. You will get about 2 quarts (32 ounces) +/- 10 ounces. Be prepared to capture this much water.

At 1D you will record how much water you captured at 1C. If the volume displayed is greater than the volume you caught, lower it by pressing the Brew 2 button (-). If the displayed volume is less than the captured water, raise the volume by pressing the Brew 1 button (+). Now the machine is calibrated for dump valve #1, press your cancel button to move to step 1E.

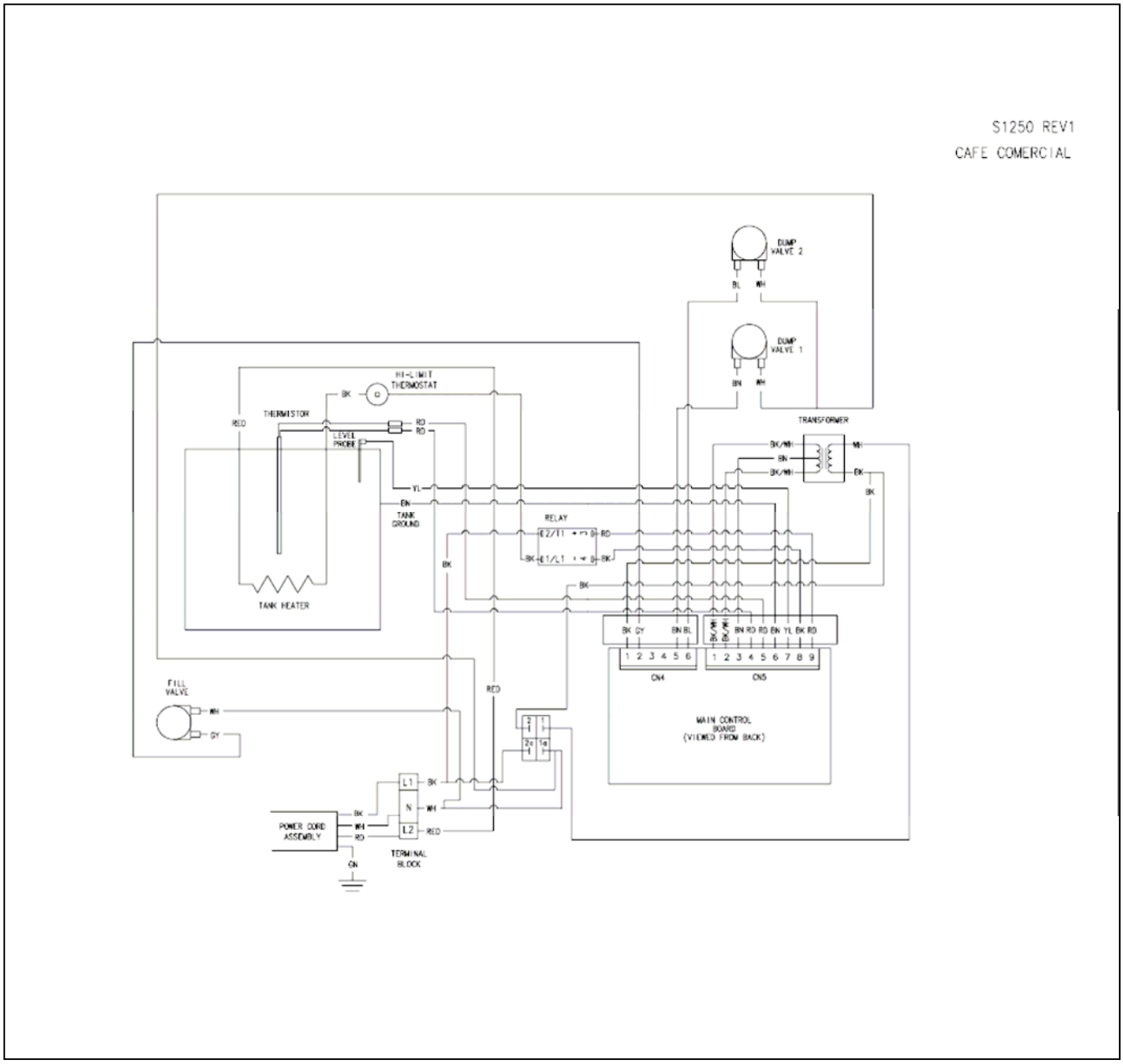
At 1E a two-minute time will be displayed and the Brew 2 button will be lit. This button, when pushed, will begin the process of calibrating the volume for dump valve #2. You will need to capture the water that will be dispensed when you push the button. You will also need to measure the water that is dispensed. You will get about 4 quarts (64 ounces) +/- 10 ounces. Be prepared to capture this much water.

At 1F you will record how much water you captured at 1E. If the volume displayed is greater than the volume you caught, lower it by pressing the Brew 2 button (-). If the displayed volume is less than the captured water, raise the volume by pressing the Brew 1 button (+). Be prepared to capture this much water.

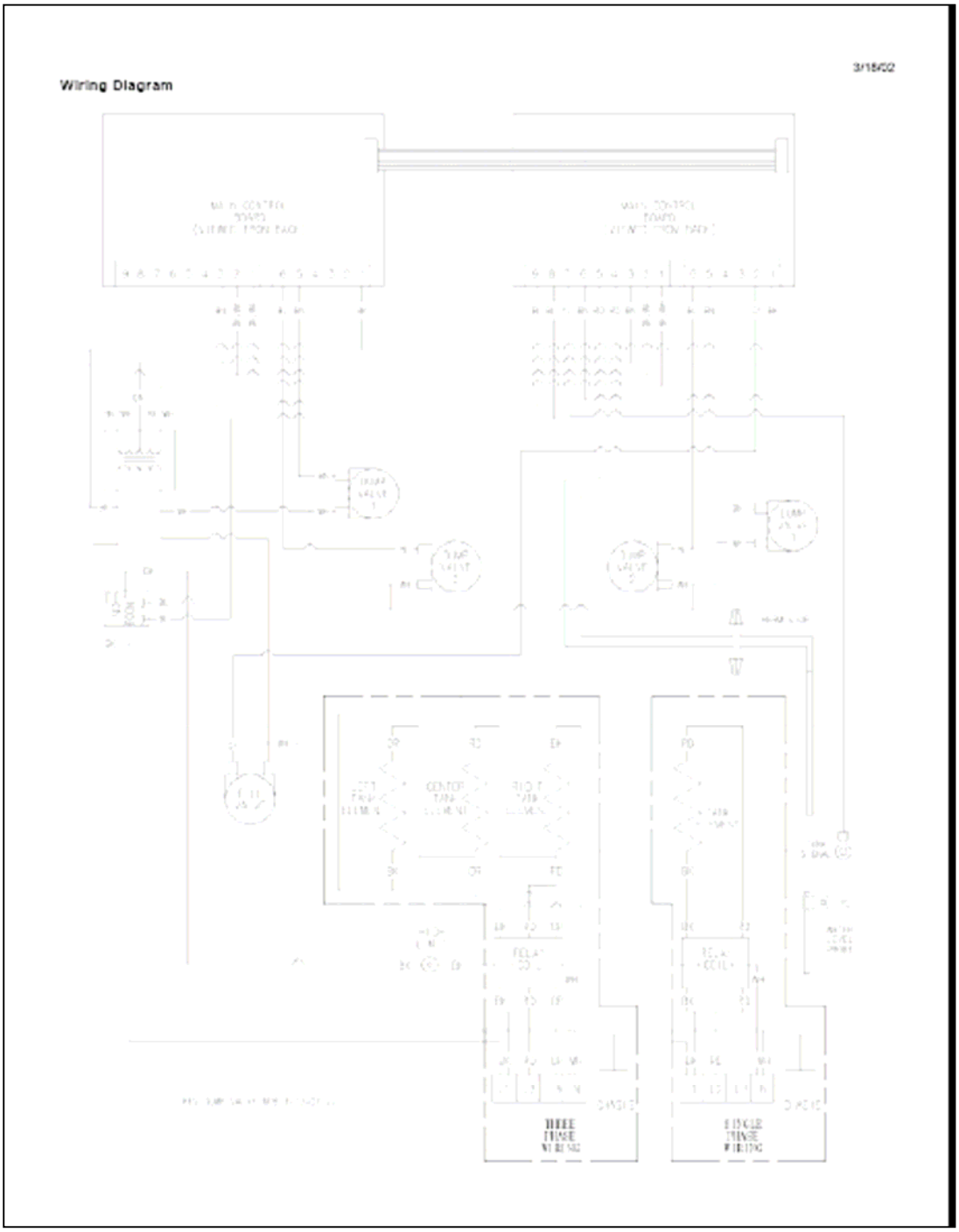
Now that machine is calibrated, turn off the machine for 2 seconds and turn it back on. This will get the machine out of calibration mode allowing no else to get into this program.

To return to calibration mode, just repeat the above steps.

Wiring Diagram [Single]



Wiring Diagram [Dual]



PDS Flow Valve – Information Sheet

Your machine has been equipped with the PDS flow control system. The PDS flow control system is the results of many years of engineering effort to create a flow valve that would be accurate over a wide range of water pressures as well maintain its volume setting for many years within the harsh water environment that coffee brewing equipment must operate.

Depending on the model brewer, your equipment may either have the low or high flow valve, or possibly both, built into the plumbing system of your equipment. The low flow valve is fully adjustable within the flow rate range of 0.04 GPM to 0.31 GPM while the high flow valve covers a range of 0.42 GPM to 1.38 GPM. For easy identification of the valve in your application, the low flow valve is beige and will have a green bonnet and the high flow valve will have a red bonnet.

Other features designed in to the valve include an internal water strainer, a non-regulated water supply side for connecting to a independent faucet system, double “o” ring swivel fittings to eliminate leaks due to equipment being moved [and to aid in providing quick service], and most importantly a porcelain sleeve with a piston assembly that is self cleaning which cannot be affected by chemical within the water supply. The system has been designed to operate over a wide range of pressures; low flow valve from 10 psi to 70 psi and high flow valve from 40 psi to 110 psi with an accuracy of 1% +/-.

The time setting of the timer, in the machine, in conjunction with the flow rate set on the PDS valve will determine the volume of water delivered for the brew cycle. If the valve is set at a rate of 0.25 GPM and the timer is set for 2 minutes, the volume delivered will be 0.25 x 2 or 0.50 gallons (64 oz.). Refer to the table for other flow rates, timer settings and volumes. Flow rate accuracy is critical, as the timer setting will not change.

Attention: Pressure Faucet Precaution

When this PDS valve is installed on equipment with pressurized hot water coil faucets, check to see if a back flow preventer is incorporated in the water line. If not, it may be necessary to install a pressure relief valve. If you have any questions please call NEWCO technical support at 1.800.556.3926.

Timer Setting Required To Obtain Desired Water Volume
Time Is Shown In Seconds

Desired	Flow Rate – In Gallons Per Minute								
Volume	0.175	0.200	0.220	0.250	0.300	0.350	0.500	0.750	1.000
1 liter	91	79	72	63	53	45	32	21	16
64 oz.	171	150	136	120	100	86	60	40	30
72 oz.	193	169	153	135	113	96	68	45	34
2.2 liters	199	174	159	139	116	100	70	46	35
2.5 liters	226	198	180	159	132	113	79	53	40
3 gallons	1029	900	818	720	600	514	360	240	180
	Brew Time Shown in Seconds								

Installation Instructions

Note: Cost of installation and any subsequent fine-tuning is the responsibility of the buyer.

Warning: Read follow installation instructions before plugging in machine to an electrical outlet.

1. Remove the machine from shipping carton. It is strongly recommended to perform a visual inspection of the machine inside out checking for loose connections on either control board or for damage to outlet valve that might have been caused by mishandling during shipment. Please keep carton and packing in case the machine needs to be re-shipped.
2. Plumb in the brewer. ***Caution***: Power to the machine must be off before proceeding with installation.

    - Flush water lines before installing machine. Machine should be connected to cold water line for best operation. Check incoming water pressure with pressure gauge.
    - Water pressure should be at 20 lbs. For less than a 25 foot run, use 1/4" OD copper tubing and connect to a 1/2" or larger water line. For more than a 25 foot run, use 3/8” OD copper tubing from a 1/2" or larger water line. Use a adaptor fitting for the connection to the machine.
    - If the water pressure is 50 lbs or greater, it is strongly recommended to install a water regulator and set the water pressure below 50 lbs. This will prevent erratic brew levels.
    - Connect the incoming water line to the incoming main fitting [3/8 NPT x 1/4 F male] on the back of the machine.
    - Provide individual water line(s) to each machine when there are multiple machines in use.

Note: A shut off valve should be installed on the incoming water line in a convenient location.

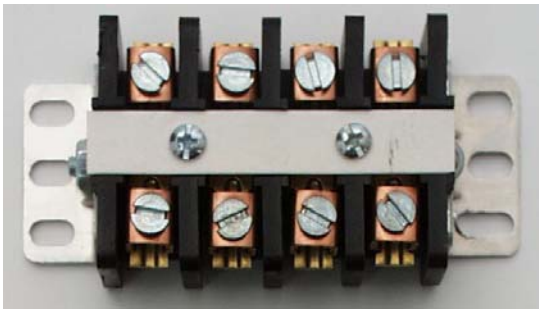
3. Place empty server under brew basket.

4. Plug in to proper voltage circuit and turn the power on.

5. Water will fill automatically begin to fill the tank.

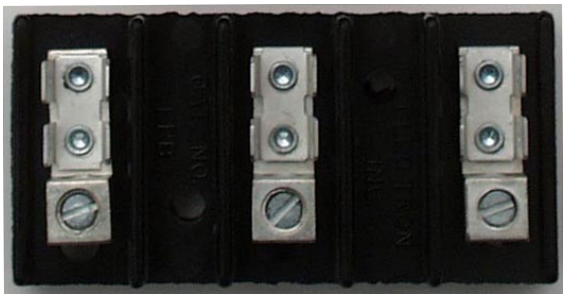
Recommended Terminal Block lug torque specifications

P/N 701972 – 35 In. lbs.



P/N 701000 – 35 In. lbs

P/N 511053 – 20 In. lbs



NEWCO PRODUCT WARRANTY

NEWCO warrants equipment manufactured by it for 1-year parts and labor.

These warranty periods run from the date of purchase. NEWCO warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component, or part that was not manufactured by NEWCO or that, in NEWCO'S judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer: **1)** Giving NEWCO prompt notice of any claim to be made under this warranty by telephone at (800) 556-3926 or by writing to PO Box 852, Saint Charles, MO 63302 **2)** If requested by NEWCO, shipping the defective equipment prepaid to an authorized NEWCO service location **3)** Receiving prior authorization, from NEWCO, that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers, or employees of NEWCO are not authorized to make modifications to this warranty or to make additional warranties that are binding on NEWCO. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If NEWCO determines in its sole discretion that the equipment does not conform to the warranty, NEWCO, at its exclusive option while the equipment is under warranty, shall either: **1)** Provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a NEWCO Authorized Service Representative or **2)** Shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST NEWCO FOR BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT NEWCO'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall NEWCO be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claim's of BUYER'S customers, cost of capital, cost of downtime, cost of substitute equipment, facilities or services, or any other special, incidental, or consequential damages.